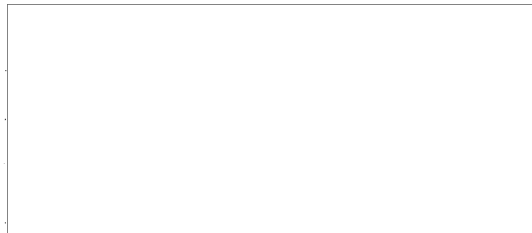


CONFIDENTIAL

14 MAR 1957

Related
Materials
24 hour clockwork →



25X1

CONFIDENTIAL

Full
Firing eleven
2A hr. Clockwork

~~SECRET~~

CONFIDENTIAL

Rec'd ED
3/15/57
9:00

March 14, 1957

Dear Hank:

Transmitted herewith is our final report on
 "Clock Testing Program," Task 1210-E-6c. If you have
 any questions concerning this task, please do not hesi-
 tate to call on us.

Regards,

Ray

Frank

FRP:ERL:mpk
 Enclosures 4

DOC	REV DATE	BY
CHIEF COMP	03/15/57	01
CHIEF CLERK	03/15/57	01
JUST	03/15/57	01

CONFIDENTIAL

~~SECRET~~

~~SECRET~~CONFIDENTIAL

January 14, 1957

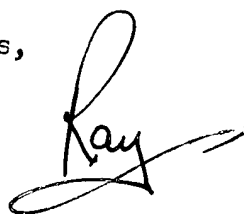
Dear Andy:

To confirm our conversation of Friday, we will withdraw from stock seven additional clocks. Two will be put through the drop test, their accuracy determined by two runs at ambient temperature, and then subjected to the 200 foot submergence test prior to rerunning.

The other five clocks will also be run twice at ambient temperature to determine their accuracy. They will then be subjected to 130 deg. F for a period of 30 days whence they will be removed, allowed to return to ambient and run once. After firing they will be reset, brought up to 130 deg. F and run and fired at the above temperature.

I will keep you posted on all further results. If you should have any questions or comments re this letter, please let me know.

Regards,



UMC (STA 1)

DOC	REV DATE	BY
ORIG COMP 056	056	TYPE 01
ORIG CLASS S	REV CLASS	
JUST	NEW	AUTH: MA 10-2

CONFIDENTIAL
~~SECRET~~

~~CONFIDENTIAL~~

8/10 4D

20 9:00

~~SECRET~~

File 24hr Clockwork.

November 26, 1956

Dear Andy:

As per your request during your recent visit, the following is the clarification of the scope of the Clock Testing Program that we discussed.

- (1) We will make a detailed visual inspection of the contents of the cans as we unpack each clock.
- (2) The clocks will then be run twice at room temperature in order to determine their reproducibility. They will then be used on their respective tests.
- (3) We will include a ten foot drop test with various orientations on the packaged units in order to test the packaging. Only two cans will be tested providing the cans hold up; if they do not, additional cans will be run. Following this test the cans will be opened and the contents thoroughly inspected.
- (4) The instruction sheet that you were to supply arrived on the 23rd of November 1956.

We hope the above meets with your approval, if not, please let us know.

Regards,

Ray
 umc (sta 1)

DOC	REV	BY	DATE
0010	0000	001	01
0010	0000	001	01
JUST	NAAT	NAV	AUTH: NR 70-2

~~CONFIDENTIAL~~

CONFIDENTIAL

There are three rubber gaskets provided on the special adapter for the M-34 detonator. The gasket farthest from the hexagonal section of the adapter must be replaced by the inclosed gasket. For SAFETY reasons, this substitution is MANDATORY before all operations in which the M-34 detonator is used.

DOC	REV DATE	BY	TYPE
ORIG COMP	85	LD	30
ORIG CLASS	CLASS	REV CLASS	
JUST	NEXT REV	AUTH: NA 10-2	

CONFIDENTIAL

CONFIDENTIAL

August 29, 1956

Dear Bill,

It is requested that 1 each of the rubber gaskets in your possession and 1 each of the instruction sheets to be furnished be placed in a polyethylene bag and taped to the cans containing the 24-Hour Firing Device, Clockwork. It is suggested that taping be done immediately before domestic and overseas shipments of all of the devices; stock # is 1/0515-000-0019.

If there is any question regarding this request, please do not hesitate to contact me.

BOB P.

:jl

DOC	REV DATE	BY
CRIG COMP	9/10	75 D
CRIG CLASS	1.1	01
JUST	NEXT REV	AUTH: NR 10-2

CONFIDENTIAL

CONFIDENTIALfile -
7.8.
CW 24 hr

25X1

— testing of Atsugi Clockwork —

In units sitting around for a year in humidity

20 - wound, not cocked

stopped from 28 hr. to 40 hrs.

20 - cocked, 8 hr. test

2 stopped after 1 1/2 hr. shaking started then up O.K. -

18 fired from -2 to +15 min.

20 - cocked, all fired from -5 to +12, 8 hr. test (incl. 2 promobous)

" " " " " - 9 to +8, " " " "

" " " " " - 4 to +11, " " " "

all tests from wall clock

DCO	REV DATE	BY
ORIG COMP 276	DATE 56	TYPE 30
ORIG CLASS 1	PAGES 1	REV CLASS
JUST	NEXT REV	AUTH: HR 70-2

CONFIDENTIAL

CONFIDENTIAL

File:
Firing Device,
clockwork
24 - Hour

EM NAME

FIRING DEVICE:

STOCK NUMBER

0515-000-0019

DESCRIPTION

clockwork, 24 hour; mechanical operation; min graduation 15 min, max graduation 23 hours and 45 min, may be set at any desired interval between the min and max settings; dial indicates amount of time remaining before actuation of device. Incl 2 adapters, one couples device to std blasting cap and also permits attaching device to any charge that is threaded to receive the military percussion base adapter; 2nd adapter couples M-34 Detonator to the firing device, unit can be attached to Limpet, to the Initiator, Dispersed, Corbustable, or to the Incendiary Head for the AC Delay. Also incl coil of wire to secure the mechanism to the target, eyelets in the case permit passage of the wire for fastening; small tube of opaque compound is incl for obscuring the window of the dial to prevent reading of the dial. Unclassified pictorial instruction sheet is incl w/ea device; also available as a separate item is a classified instruction manual w/complete information on practice operation, re-setting, max accuracy procedures, temperature limitations, and underwater operation. At some time in the future an electric switch for remote operation will be available as a separate item. Device operable in water to depths of 75 ft; ea unit individually packed in hermetically-sealed metal can.

EXPENDABILITY	UNIT OF ISSUE	REGULATED	COGNIZANCE	AVAILABILITY	RELATED TO	TECHNICAL REFERENCE NO.
XX X X	Each	YES NO	TSS	S S S O		
MANUFACTURER AND MFR. NO.			USED WITH		PART OF	
SUBSTITUTE ITEMS			INTERCHANGEABLE ITEMS			
SUPERSEDES	SUPERSEDED BY	UNIT PRICE	NET WEIGHT	GROSS WEIGHT	NET CUBE	GROSS CUBE
STANDARD PACK	MPL. NO.	SOURCE	orig: rev:	DATE 16 Sep 55 3 Apr 56	INITIALS GDP E.D.P.	INDEX NO.

FORM NO. 11 USE PREVIOUS EDITIONS.
 1 APR 55

CATALOG DESCRIPTION

DOC	REV DATE	BY
ORIG COMP	05p	TYPE 05
ORIG CLASS	M/D	REV CLASS
JUST	NEXT REV	AUTM: MD 70-2

CONFIDENTIAL

MANUAL, TECHNICAL: *File* *24-hour*
 DESCRIPTION *CONFIDENTIAL*
 Firing Device, 24-hour clock;
 approx 6-1/16 in. lg, 4-1/16 in. w, 1/16 in. *clock* 21 pages plus cover and back;
 incl written and illustrated information of a practical and technical nature on
 the operation (and practice operation) of the 0505-000-0019 Firing Device,
 clockwork, 24 hour.
 Classified "SECRET".
 (NOTE: printed in English, w/o reference to publisher or country of origin)

PENDABILITY			UNIT OF ISSUE			REGULATED			COGNIZANCE			AVAILABILITY			RELATED TO			TECHNICAL REFERENCE NO.		
XX	X	X	Each			YES		NO	TSS			S	LS							
MANUFACTURER AND MFR. NO.									USED WITH						PART OF					
SUBSTITUTE ITEMS												INTERCHANGEABLE ITEMS								
SUPERSEDES			SUPERSEDED BY			UNIT PRICE			NET WEIGHT			GROSS WEIGHT			NET CUBE			GROSS CUBE		
STANDARD PACK			MPL. NO.			SOURCE			DATE			INITIALS			INDEX NO.					
									7 May 1956			GDP <i>2 DP</i>								

FORM NO. 11 USE PREVIOUS EDITIONS. APR 55

CATALOG DESCRIPTION

(10)

TRANSMITTAL SLIP		DATE
		8 May 1956
TO:		
Mr. <i>[redacted]</i> , TSS/ED		
ROOM NO.	BUILDING	
210A	West Out Bldg	
REMARKS:		
Attached is your manual and a copy of our catalog card which has been written in accordance with the methods of the Federal Cataloging Program.		
Your criticism of this and other items in the cataloging system will be appreciated.		
The IBM card will receive normal distribution as requested by you (the IBM card goes to overseas stations and gives them an abbreviated reference description of the item).		
<i>Thanks! JAT</i>		
FROM: Identification & Cataloging Branch, Supply Div., OL (Patterson)		
ROOM NO.	BUILDING	EXTENSION
1003	4trs. Eye	2610

25X1

DOG	NEW DATE	BY
ONE COMP	02	04
ONE CLASS	4	5
NEW CLASS	4	5
NEW DATE	02	04
NEW CLASS	4	5
NEW DATE	02	04
NEW CLASS	4	5

CONFIDENTIAL

CONFIDENTIAL

The text of this manual originated with the ADL Project Engineer, H.F. Knight. A large number of dry runs by personnel unfamiliar with the device resulted in numerous revisions by both TSS/ED and TSS/TPB. Illustrations were prepared by TSS/TPB. It is planned that at least one manual will be included with each shipment of 24 hour clockworks. 880 copies have been printed by TSS/TRD/TPB.

DOC	REV. DATE	BY
ORIG COMP	956/2	72 D
ORIG CLASS	SECRET	REV CLASS
JUST	NEXT REV	AUTH: HQ 70-2

CONFIDENTIAL

CLOCKWORK FIRING DEVICE

1. INTRODUCTION

This instruction sheet is a guide to the handling and operation of the OSS Clockwork Firing Device with the OSS Limpet. As the clockwork mechanism cannot be directly attached to the limpet, the enclosed OSS Adapter joins the clockwork to the limpet. *Note: the OSS Clockwork Firing Device cannot be replaced by the Navy M3 Clockwork as the adapter will not fit the M3.*

2. DESCRIPTION

The device consists of three essential parts — a clock, a release mechanism, and a firing pin.

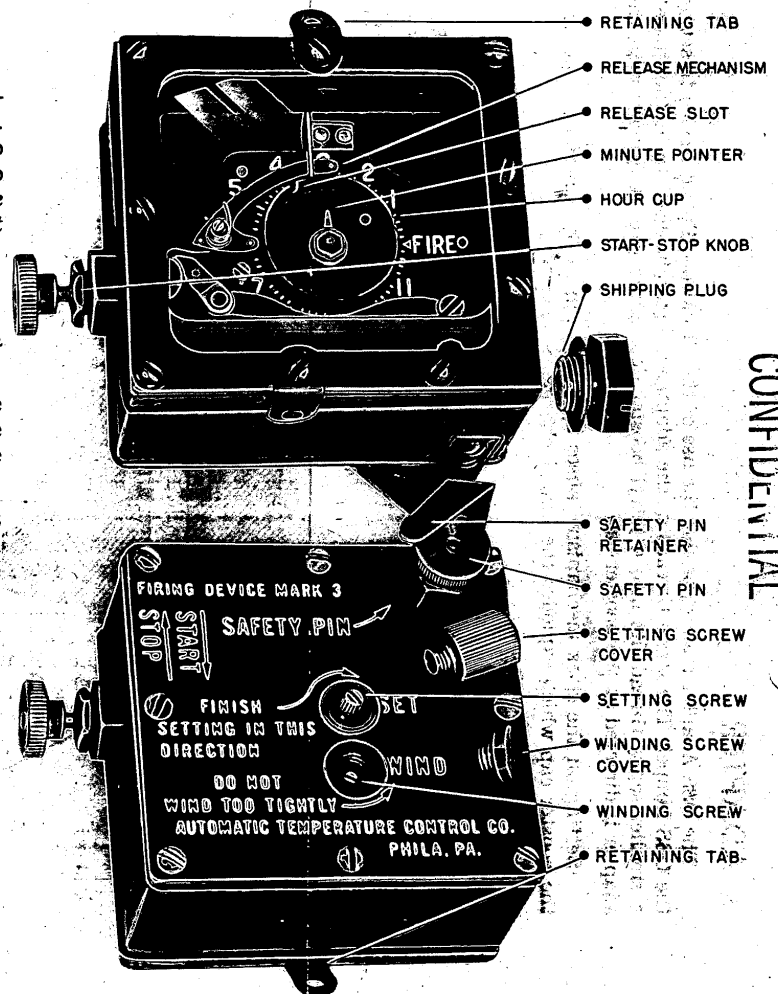
Luminous numerals and pointers permit the clock to be set at night. The hour hand is a cup which revolves clockwise and carries a dot to indicate the remaining hours. The minute hand is a small pointer in the center of the cup.

The release mechanism has on its underside a bar that rides on the outside rim of the hour cup. Until it slips through a release slot in the cup at the time set for firing, the release mechanism remains in the position shown in the photograph.

This device is packed unwound and set for a time delay of 1 hour and 15 minutes. In this position the hour dot on the cup is between the 1 and 2 and the minute hand points to 3. Setting the hour dot and the minute pointer controls the exact number of hours and minutes that will remain before the firing pin strikes.

Once wound, set, and started the cup begins to revolve at the rate of one complete revolution in 12 hours. In the rim of the cup is the release slot. When the cup carries the hour dot around to the zero or "fire" position the release slot will be aligned with the bar of the release mechanism — permitting the bar to slip through the slot into the cup and release the firing pin.

CONFIDENTIAL

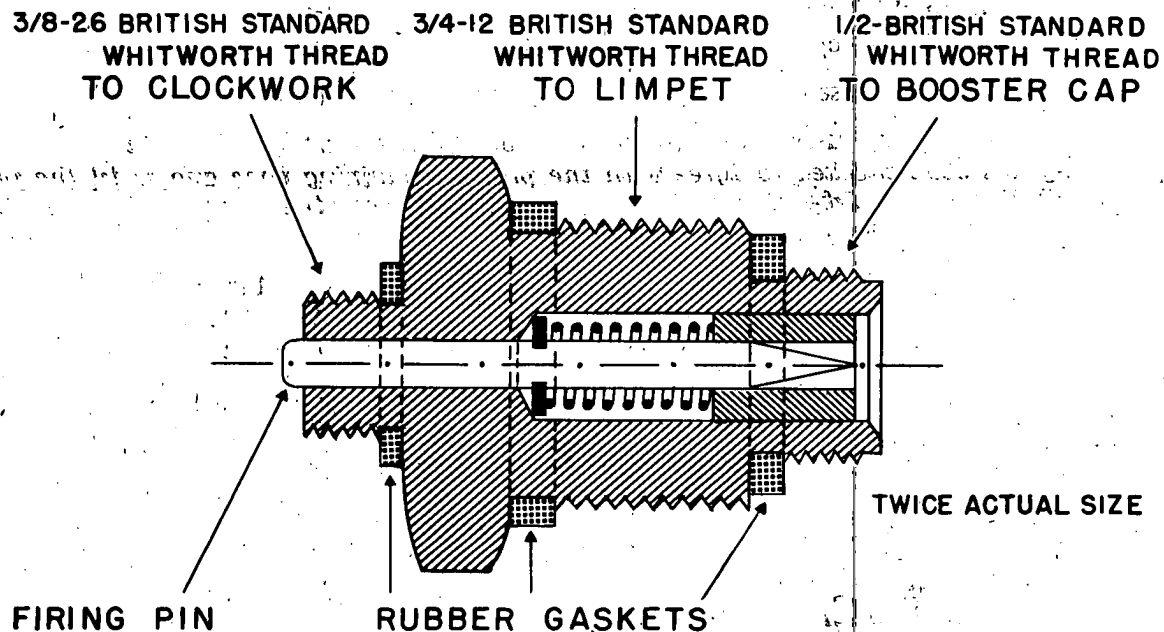


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3. ADAPTER

The OSS Adapter makes possible the use of the Clockwork Firing Device to set off the OSS Limpet. The screw threads of the adapter are standardized to fit the limpet. A smaller screw thread fits into a tetryl booster detonating cap. A firing pin in the adapter is directed at the booster cap.

Setting off the clock mechanism causes the firing pin in the adapter to detonate the booster cap which explodes the limpet charge.



4. INSTALLATION

Install and operate the OSS Clockwork Firing Device as follows:

- A Remove the adhesive tape from the bottom of the clock and insert the shipping plug.
- B Unscrew the cover of the winding screw and wind the clock. Stop winding as soon as there is some difficulty in turning the screw.
- C Replace the cover of the winding screw. This restores the case to a waterproof condition.
- D Unscrew the cover of the setting screw and set the clock for the pre-determined time delay. Although the clock may be set by turning the setting screw in either direction, the final setting for at least one revolution of the minute hand should be made in a clockwise direction as indicated on the back of the case. *To assure a proper margin of safety the time delay should not be set for less than 15 minutes nor for more than 11 hours and 45 minutes.* Table tests show that the device will not fire prematurely up to 3 minutes remaining time. However, operating conditions and the time required for completing the operation and getting away after the clock has been started require a safety margin of 15 minutes.

CONFIDENTIAL

- E Check the bar of the release mechanism, making certain that it is outside the rim of the cup and has not already slipped inside.
- F Check the clock starter, making certain that it is completely in the "stop" position. As long as the starter is in the "stop" position the release bar cannot slip into the cup.
- G Replace the cover of the setting screw, thus restoring the case to a waterproof condition.
- H Screw the booster cap into the adapter.
- I Unscrew the shipping plug and screw the adapter complete with booster cap into the shipping plug opening.
- J Screw the entire assembly — clockwork, adapter, and booster cap — into the limpet.
- K Turn the starting knob to the "start" position. *Do not start the clock until the setting has been checked to agree with the proper remaining time and until the installation is complete. Count time as running out from the moment the clock is started. The clock starts without regard to the safety pin.*
- L Bend back the protective strip away from the safety pin. Pull the safety pin out as far as it will go, and lock in place by twisting counterclockwise as far as possible. *Do not pull the safety pin until the other operations described here have been completed.*

THE CLOCKWORK FIRING DEVICE WILL FIRE WHEN THE REMAINING TIME HAS BEEN USED UP.

5. USE AND CARE IN HANDLING

To avoid possible injury DO NOT make the following errors:

DO NOT reset the clock without having the safety pin in the "safe" position and without having the starting knob in the "stop" position. In the "stop" position the release mechanism cannot drop toward the firing position. In the "safe" position of the safety pin the firing pin cannot fire.

DO NOT experiment with the device without having the shipping plug screwed in place. If the firing pin hole is uncovered and the safety pin is withdrawn, firing of the device will throw the safety pin at high speed with possible injury to personnel or equipment. If the adapter with booster cap has been screwed into place, firing of the device will detonate the booster cap.

DO NOT fail to shield the luminous clock face at night as it may give away the operator's position.

CONFIDENTIAL

REPRODUCED BY R & D

CONFIDENTIAL

OSS
PRESENTATION

IMPORTANT

Packed in each can is the clockwork, limpet adapter, booster, key type screwdriver, wire, and silica gel packet.

As the can is too small to accommodate the shipping plug in place, the opening is covered with tape. The silica gel packet prevents moisture from damaging the clockwork.

ONCE THE CAN IS OPENED, SCREW THE SHIPPING PLUG IN PLACE TO PROTECT THE CLOCK. The silica gel packet may now be discarded.

For special operations, use the wire to attach the clockwork device.

CONFIDENTIAL

Hardware in use

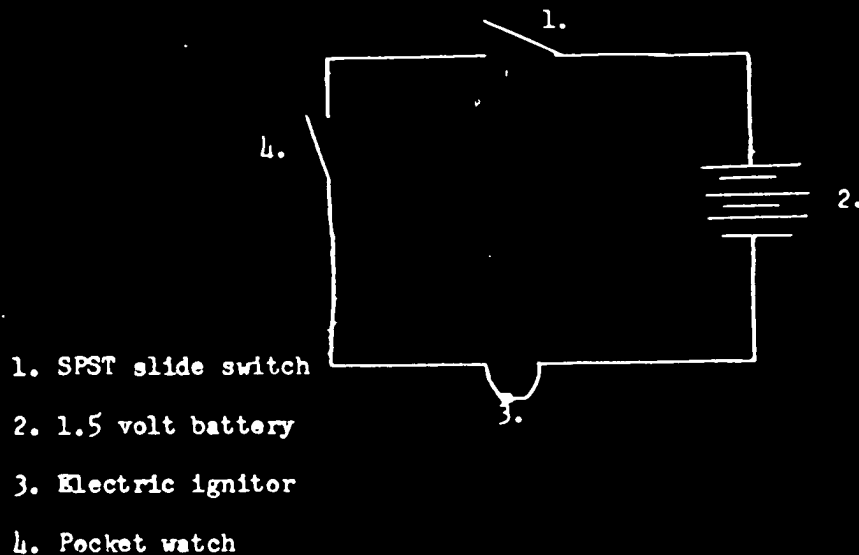
Garland's units:

DOC	REV DATE	BY
ORIG COMP	056	56
ORIG CLASS	5	PAGES 5
JUST	NEXT REV	TYPE 30
		REV CLASS
		AUTH: NR 10-2

CONFIDENTIAL

SECRET

WATCH TIME RELEASE MECHANISM

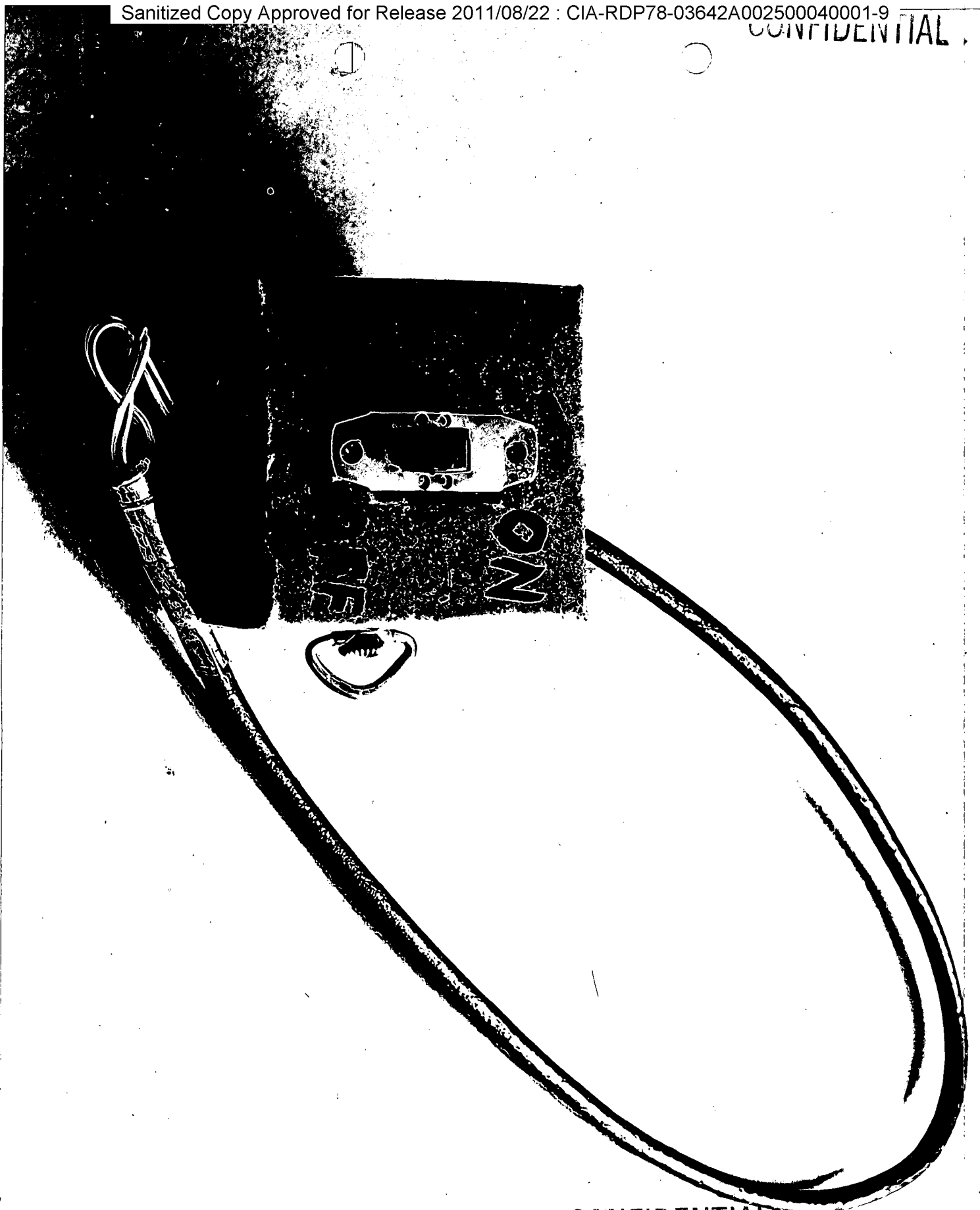


Pocket watches are utilized as a switch by inserting a brass screw through the face. Either the hour or minute hand acts as one side of the switch and makes contact as the hand touches the brass screw. Any luminous paint used on the hands must be removed at the point of contact to eliminate the possibility of it acting as an insulator.

The single pole single throw switch is used only as a safety device to prevent accidental firing should the hand make contact with the screw prematurely.

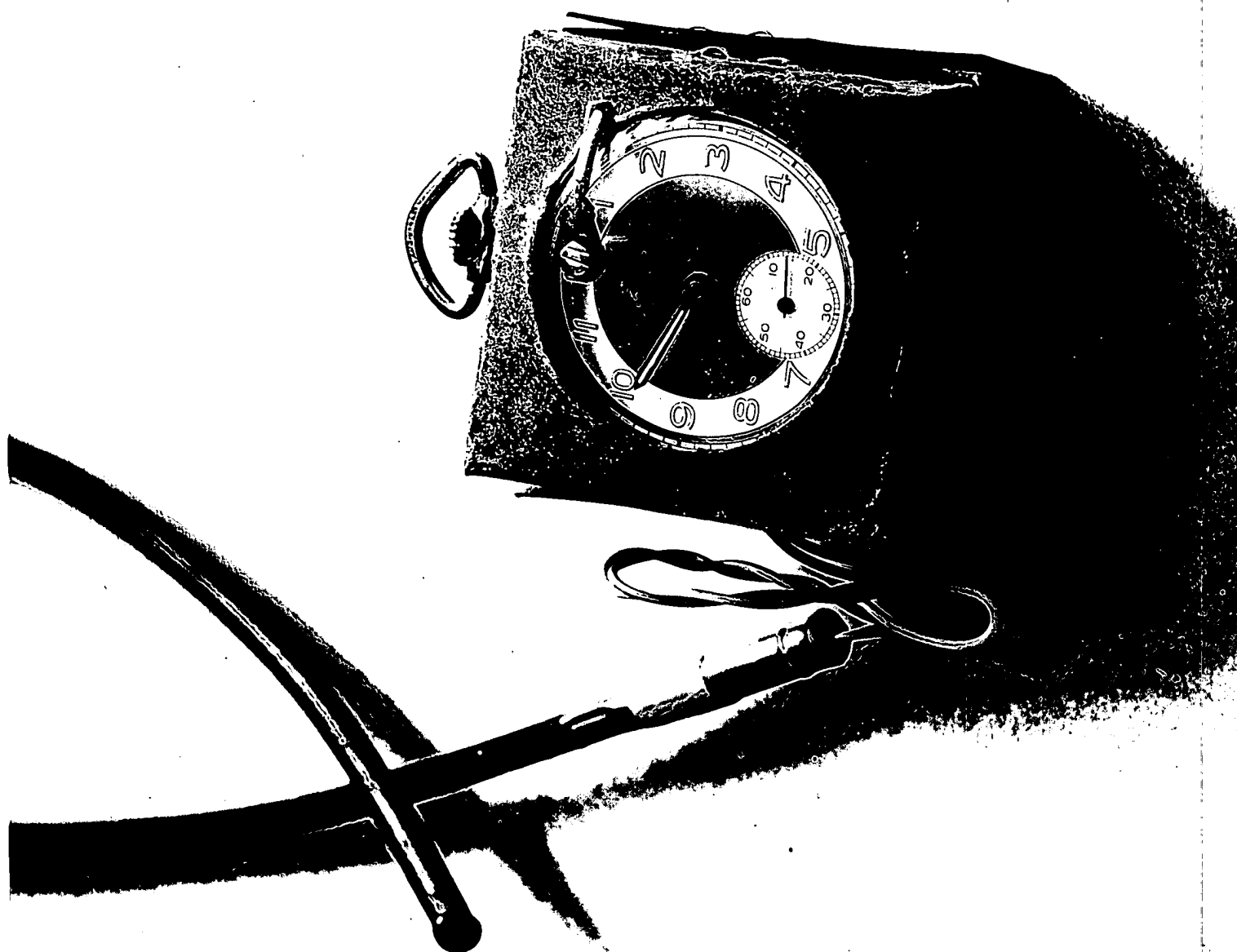
SECRET

CONFIDENTIAL



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CONFIDENTIAL



CONFIDENTIAL

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CONFIDENTIAL

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9/21

21 October 1955

Dear Walt:

Enclosed are three (3) copies of our Proposal for a Clock Testing Program in accordance with my recent discussion with Andy. There are sufficient funds in this proposal to allow for variations and additions to the testing program in conformity with the directions of your Project Engineer.

If additional information or changes in this proposal are required, please let us know.

Very truly yours,

Bob F.

3 incls

DOC	REV DATE	BY
ORIG COMP 056	07 56	TYPE 01
ORIG CLASS 4	11 7	REV CLASS
JUST	NEXT REV	AUTH: NR 10-8

CONFIDENTIAL

58214-ABMATERIAL LIST SUMMARY

For 1000 order

Zinc Diecasting Alloy	1100.0
Sheet Brass	16.0
Sheet Phos. Bronze	13.0
Brass Rod	<u>422.0</u>
Total Copper Base	451.0
Sheet Steel	463.0
High Carbon Steel Sheet	1.0
Steel Screw Stock	34.0
High Carbon Steel Rod	1.0
Stainless Steel Rod	27.0
Iron Rivet Wire	70.0
Steel Music Wire	<u>9.0</u>
Total Ferrous	605.0
Lucite	68.0

DOC	REV DATE	BY
ORIG COMP <u>OSb</u>	GPI <u>5b</u>	TYPE <u>30</u>
ORIG CLASS <u>M</u>	PAGES <u>1</u>	REV CLASS
JUST	NEXT REV	AUTH: MR 78-2

ASTIA

Basically a collection agency of information.

Combination of a number of government agencies
devoted to getting information.

Washington address:

[Redacted]

25X1

[Redacted] has had contact with them.

25X1

If Dayton address is wanted I can contact
Bessie and she can get it for me.

*OCO Mr Wessel 8/76/
is trying to get this
report for us.
ASTIA is not too willing
to let go.*

CONFIDENTIAL

MATERIALS COST # **2,100**

FUTURE: Design of a more accurate electrical unit.

1,000
1,000

CONFIDENTIAL

[illegible]

15

三

100

五、

CONFIDENTIAL

TOTAL MAN DAYS	
70	
65	
60	
55	
50	
45	
40	
35	
30	
25	

NOTICE OF ABANDONMENT ISSUED AND INVOICE
NAVDOP FORM 1380 (Rev. 9/47)

PAGE 1 OF 1 PAGES

NAD S/O NO. 2211-53

DATE 12 Nov 53

SHIPPING DIRECTIVE - PACKING SLIP

Mine

FROM: The Commanding Officer, Naval Station Depot, [90] Yorktown, Va. (109)

TO: Commanding Officer, Equipment Modification Unit # 1, 8708th Administrative Area Unit, Cameron Station, Alexandria, Va.

SHIPPED TO: Transportation Officer, S 44/2658-54, Cameron Station, Alexandria, Va. for Commanding Officer, Equipment Modification Unit #1, 8708th Administrative Area Unit, Cameron Station

REFERENCE: (a) BuOrd AMSO NO. 552490, (b) BuOrd S/O NO., (c) R/O NO., (d) BuOrd MAC-1 disp 131406Z

DATE WANTED Immediately	DATE SHIPPED	SHIPMENT MARKING STANDARD	COPIES		INV	S/O	MA	P/S
NO. PACKAGES	CU. FT. OR CUB. SIZE		Contract	3	1	3	1	
WEIGHTS WGT.	DUNNAGE WGT.		228-ANGF			3		
ORIGIN			Demo	9		3		
NMD Truck			S.O.	2	1			
PAR. C.	S/L NO.		BuOrd				1	
CHECKED BY	Ship by: 17 Nov 53							

ITEM NO.	QUANTITY	CODE	PURPOSE	Inv. # 001412	DESCRIPTION	COMS RVLTANT	BUILDING	UNIT QUANTITY
1	2	483-1509-E	8		Firing device, demolition, Mk 15-0 unserviceable EMPTY		1BT1	
2	3	640-2000-E			Initiator, cord detonating, Mk 2-0 EMPTY		16MCH	
NOTES: Priority G Above material shall be rendered inert prior to shipment by removing percussion primer from base coupling. Item #1 shall be rendered "Inert" and shall not be to be used with explosives. Furnish copy of shipment orders, invoices and B/L to BuSAND. Code S44.								

CONFIDENTIAL

USN

25X1

LCDR, USN, By direction ech
Commanding Officer

NOTES FROM FIELDING

STREETS - FUELS & LUBRICANTS, 000

PITMAN & DUNN	LAB	OIL	MIL-0-11734
-70°F	15,000	CS	
-40°F	1,600	"	
-20°F	580	"	
0°F	240	"	
77.5°F	19.4	"	
100°F	12.5	"	

CONFIDENTIAL

MYVOLUME OIL

-70°F	160,000	CS	Theoretical, not worst.
-40°F	11,000	"	
-20°F	2,400	"	
0°F	780	"	
77°F	46	"	
100°F	27	"	

Moly di sulfide does not replace itself

If you can find a temperature when they
they start losing badly, that is
the point of limiting viscosity
and thus it cannot be exceeded.

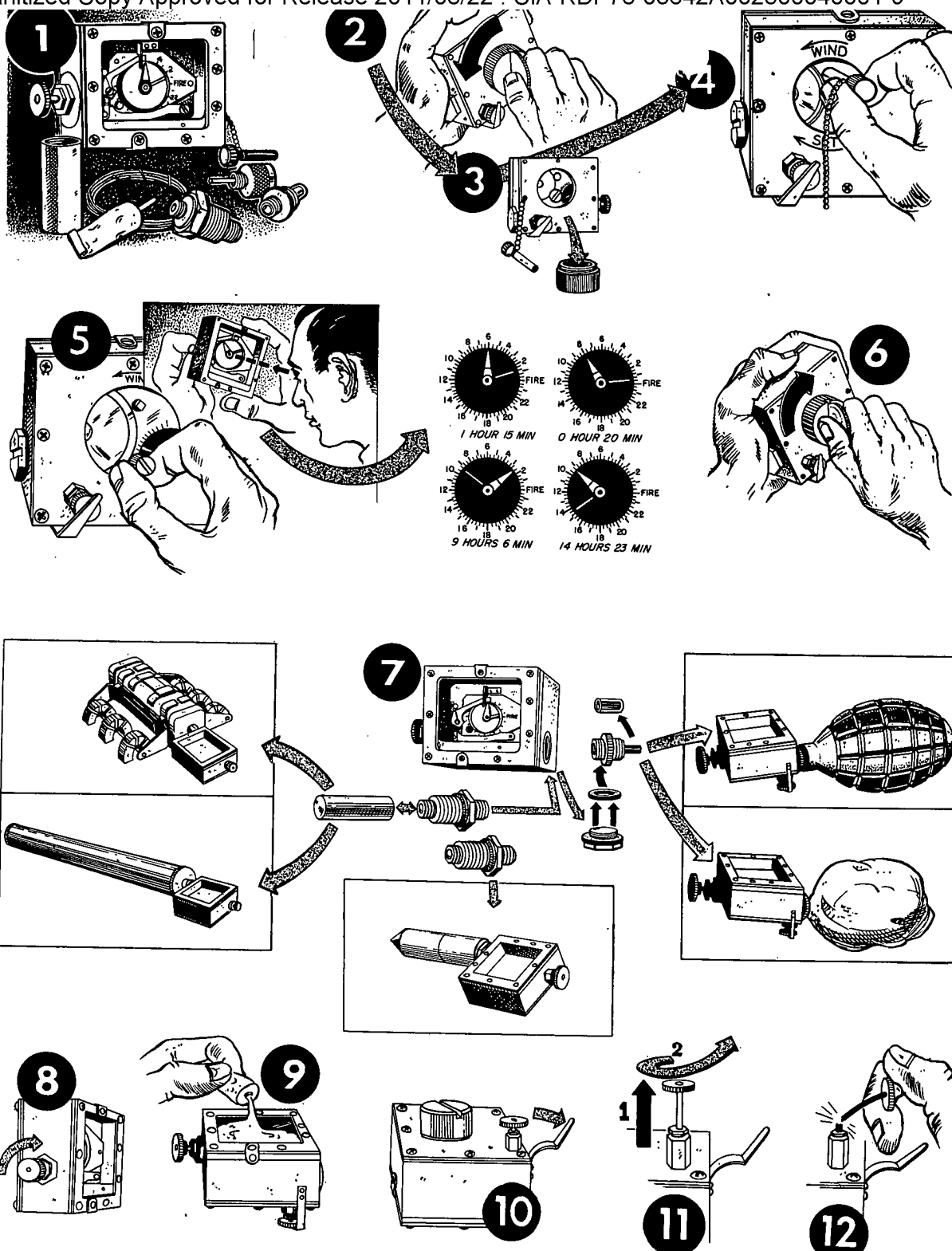
Galvami ~~corrosion~~ corrosion bad
prob. Moly helps offer no protection
Pitman Dunn has 5% Barium sulfamate

CONFIDENTIAL

23 June 1954

RECEIVED, from TSS/MD, 1 24-hour clockwork firing device with
adapter and cocking plug and also 1 J-Feder with adapter and packaging
sample.

STAT



CONFIDENTIAL

Have one (1) firing device,
clockwork, 24-Hour to Nicholson,
NAVY, BUORD, REZE, Wing O
Room 413

25X1

13 January 1956

CONFIDENTIAL

*File: 24hr
Clockwork 2 hr
Sept 10 1957*

Received of



25X1

CONFIDENTIAL

*one 24 hour clockwork
timing device*

two adaptors

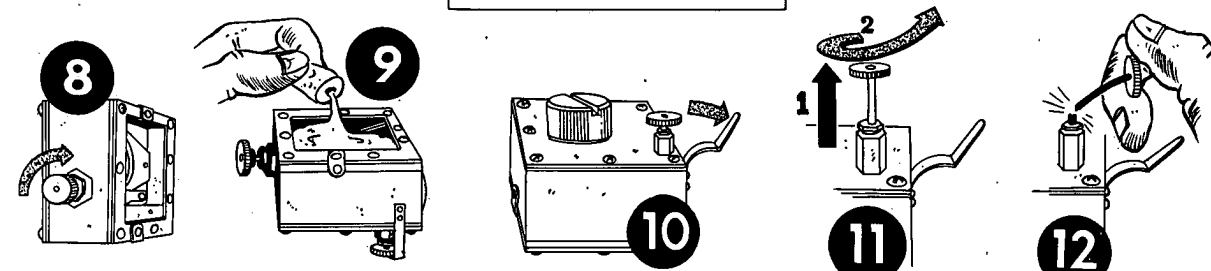
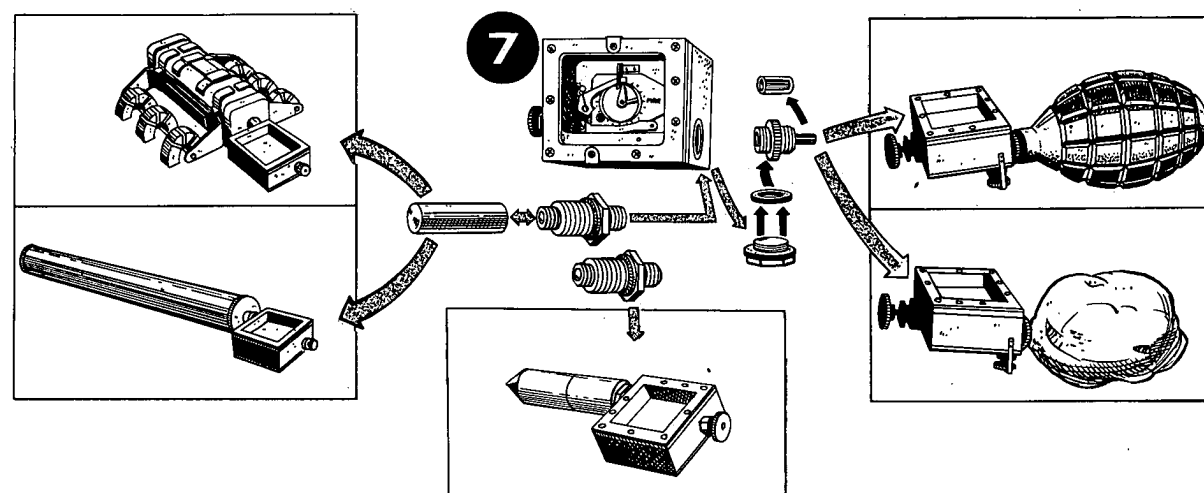
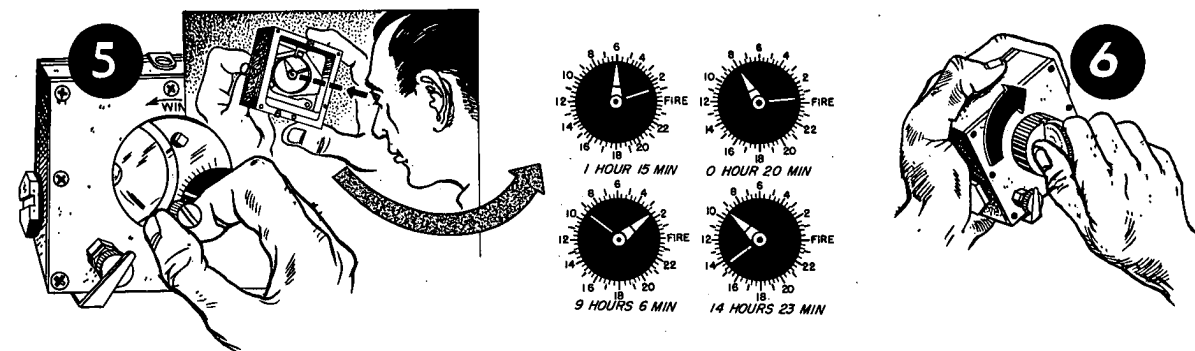
one dummy detonator.



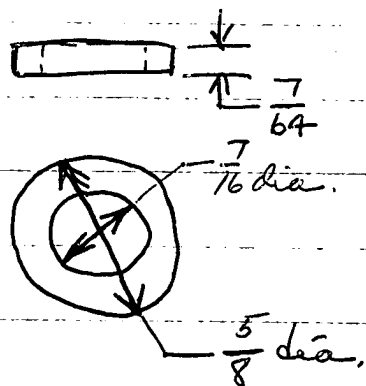
25X1

*Phulco Corp.
4700 Wisconsin Ave
TE-9-4000
Ext 621*

CONFIDENTIAL



new gasket for adapter — c/o Hannigan



NEOPRENE, 55 DUROMETER

Production Machine Co.
407-415 1/2 Ave N.E.

Drawing on Stinger

DOC	REV DATE	BY
ORIG COMP <i>OSB</i>	<i>05/52</i>	TYPE <i>OSR</i>
ORIG CLASS <i>R</i>	PAGES <i>1</i>	REV CLASS
JUST	NEXT REV	AUTH: <i>HR 70-2</i>